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EXAMINER

CHU, KIM KWOK

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/562,756	Applicant(s) KOISHI, KENJI	
	Examiner Kim-Kwok CHU	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30 and 32 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9, 11, 20-23, 25, 27, 28, 31 and 33-38 is/are rejected.
- 7) ☒ Claim(s) 6, 10, 12-19, 24, 26, 29 and 39 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

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Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless --
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

2. Claims 1-5, 7-9, 11, 20-23, 25, 27, 28, 31 and 33-38 are rejected under 35 U.S.C. § 102(b) as being anticipated by Sugie et al. (U.S. Patent 6,901,039).

3. Sugie teaches a recording method having all of the steps as recited in claims 1-5, 7-9, 11, 20-23, 25, 27 and 28. Sugie teaches the following:

Regarding Claim 1, the recording method (Fig. 1), comprising the steps of: (a) generating a plurality of pulse sequences (Fig. 1; modulated laser light beam by optical pickup 122) corresponding to a plurality of linear velocities (Fig. 2; column 7, lines 10-13); (b) while rotating a recording medium 130 (Fig. 1) with a linear velocity selected from the plurality of linear velocities (Fig. 7), forming at least one of a recording mark and a space (recorded data) by irradiating the recording medium 130 with a pulse sequence (modulated laser light) selected from the plurality of pulse sequences (Fig. 6;

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pulse sequences based on write power), the pulse sequence corresponding to the linear velocity (Fig. 5; column 11, lines 6-12), wherein the step (a) comprises the steps of: (a-1) measuring at least one first recording parameter (mark duration; column 11, lines 9 and 10) corresponding to at least one linear velocity selected from the plurality of linear velocities (Fig. 5; OPC control); (a-2) determining a second recording parameter (laser power based on detected mark size; column 11, lines 19-22) corresponding to the plurality of linear velocities based on the at least one first recording parameter measured (detected the reflected mark size); and (a-3) generating the plurality of pulse sequences (modulated laser light beam) corresponding to the plurality of linear velocities based on the second recording parameter measured (modulated laser light with different laser power for recording data in a different disc velocity).

Regarding Claim 2, the step (a-1) comprises the step of: measuring the at least one first recording parameter (mark size/duration) by performing recording parameter learning (detecting) for learning a recording parameter corresponding to a pulse sequence, wherein the pulse sequence is used for forming a desired recording mark onto the recording medium (Fig. 5; OPC control).

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Regarding Claim 3, each of the plurality of pulse sequences (modulated laser light beam based on a data sequence) comprises a starting pulse and a terminating pulse, the starting pulse being provided at a beginning thereof and the terminating pulse being provided at the end thereof (inherent feature of modulated light beam based on a data sequence) the starting pulse is used for forming a starting portion of the recording mark; the terminating pulse is used for forming a terminating portion (end) of the recording mark (inherent feature of modulated light beam based on a data sequence); the second recording parameter (laser power) indicates a recording power level of each of the plurality of pulse sequences, a recording power level coefficient (laser power value) for determining a recording power level of each of the plurality of pulse sequences, a position of the starting pulse of each of the plurality of pulse sequences, and a position of the terminating pulse of each of the plurality of pulse sequences (Fig. 5; OPC controlled laser light beam having start pulse, spaces, end pulses and each pulse has its corresponding laser power).

Regarding Claim 4, the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity v_a (1X; Fig. 7), which is a lowest linear velocity, to a second linear velocity v_b (4X; Fig. 7), which is a highest

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linear velocity; and the at least one linear velocity is the first linear velocity v_a (1X; Fig. 7).

Regarding Claim 5, the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity v_a (1X), which is a lowest linear velocity, to a second linear velocity v_b (4X), which is a highest linear velocity and the at least one linear velocity is the second linear velocity v_b (Fig. 7).

Regarding Claim 7, the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity v_a , which is a lowest linear velocity, to a second linear velocity v_b , which is a highest linear velocity; the at least one linear velocity is a linear velocity v_1 and a linear velocity v_2 : and the first linear velocity v_a , the second linear velocity v_b , the linear velocity v_1 , and the linear velocity v_2 have a relationship $v_a \leq v_1 < v_2 \leq v_b$ (Figs. 7 and 8; velocity is varies between minimum and maximum).

Regarding Claim 8, the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity v_a , which is a lowest linear velocity, to a second linear velocity v_b , which is a highest linear velocity; and the at least one linear velocity is a first linear velocity v_a

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and a second linear velocity v_b (Figs. 7 and 8; velocity is varies between minimum and maximum).

Regarding Claim 9, the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity v_a , which is a lowest linear velocity, to a second linear velocity v_b , which is a highest linear velocity; the at least one linear velocity is a linear velocity v_1 , a linear velocity v_2 , and a linear velocity v_3 ; and the first linear velocity v_a , the second linear velocity v_b , the linear velocity v_1 , the linear velocity v_2 , and the linear velocity v_3 have a relationship $v_a \leq v_1 < v_2 < v_3 \leq v_b$ (Figs. 7 and 8; velocity is varies between minimum and maximum).

Regarding Claim 11, the step (a-2) comprises the steps of: determining a fourth recording parameter corresponding to the plurality of linear velocities based on at least one third recording parameter recorded on the recording medium; and determining the second parameter based on the at least one first recording parameter measured and the fourth recording parameter (Fig. 5; OPC controller 502 output modulated laser a light beam with various laser power based on mark, space, velocity etc).

Regarding Claim 20, the at least one linear velocity of the plurality of linear velocities is at least one linear velocity corresponding to at least one third recording parameter; and

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the step (a-2) comprises the step of determining a second recording parameter $h(v)$ corresponding to the plurality of linear velocities v based on the at least one first recording parameter measured (Figs. 5, 7 and 8; OPC controller 502 output modulated laser a light beam with various laser power based on disc velocity).

Regarding Claim 21, the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity v_a , which is a lowest linear velocity, to a second linear velocity v_b , which is a highest linear velocity; at least one linear velocity of the plurality of linear velocities is a linear velocity v_1 and a linear velocity v_2 ; and the first linear velocity v_a , the second linear velocity v_b , the linear velocity v_1 , and the linear velocity v_2 have a relationship $v_a \leq v_1 < v_2 \leq v_b$ (Figs. 7 and 8; velocity is varies between minimum and maximum).

Regarding Claim 22, the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity v_a , which is a lowest linear velocity, to a second linear velocity v_b , which is a highest linear velocity; and at least one linear velocity of the plurality of 20 linear velocities is the first linear velocity v_a and the second linear

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velocity v_b (Figs. 7 and 8; velocity is varies between minimum and maximum).

Regarding Claim 23, the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity v_a , which is a lowest linear velocity, to a second linear velocity v_b , which is a highest linear velocity; at least one linear velocity of the plurality of linear velocities is a linear velocity v_1 , a linear velocity v_2 , and a linear velocity v_3 ; and the first linear velocity v_a , the second linear velocity v_b , the linear velocity v_1 , the linear velocity v_2 , and the linear velocity v_3 have a relationship $v_a \leq v_1 < v_2 < v_3 \leq v_b$ (Figs. 7 and 8; velocity is varies between minimum and maximum).

Regarding Claim 25, wherein $h(v)$ is a linear function or a quadratic function (Fig. 6; the calibrated power inherently is a linear function corresponding to the linear velocity).

Regarding Claim 27, the at least one third recording parameter is selected based on an identification code recorded on the recording medium (Fig. 1; medium type such as CD is the identification code).

Regarding Claim 28, the recording power level coefficient is at least one of a coefficient for determining an erase power level of an erase pulse forming the space based on a peak power

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level of a peak pulse contained in a pulse sequence, and a coefficient for determining a bias power level of a bias pulse forming the recording mark based on the peak power level of the peak pulse contained in the pulse sequence; and the bias power level is between the peak power level and the erase power level (Fig. 5; OPC controller 502 generates laser light having various power for erase, recording and reading).

4. Claims 31 and 33 have limitations similar to those treated in the above rejection, and are met by the reference as discussed above.

5. Claims 34-38 has limitations similar to those treated in the above rejection, and is met by the reference as discussed above.

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Allowable Subject Matter

6. Claims 30 and 32 are allowable over prior art.

7. Claims 6, 10, 12-19, 24, 26, 29 and 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

As in claim 6, the prior art of record fails to teach or fairly suggest a recording method having following features:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity v_a , which is a lowest linear velocity, to a second linear velocity v_b , which is a highest linear velocity; and the at least one linear velocity is $(v_a+v_b)/2$.

As in claim 10, the prior art of record fails to teach or fairly suggest a recording method having following features:

the plurality of linear velocities are linear velocities continuously ranging from a first linear velocity v_a , which is a lowest linear velocity, to a second linear velocity v_b , which is a highest linear velocity; the at least one linear velocity is a

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first linear velocity v_a , a second linear velocity v_b , and a third linear velocity v_c ; and the first linear velocity v_a , the second linear velocity v_b , and the third linear velocity v_c have a relationship $v_c = (v_a + v_b)/2$.

As in claim 12, the prior art of record fails to teach or fairly suggest a recording method having following features:

the first recording parameter, the second recording parameter, the third recording parameter, and the fourth recording parameter have a relationship represented by

$$g(v) = f(v) + PM_{v1} - f(v1) + Adj(v),$$

where: v represents the plurality of linear velocities~
 $v1$ represents a linear velocity corresponding to one of the at least one third recording parameter; $g(v)$ represents the second recording parameter corresponding to the plurality of linear velocities; $f(v)$ represents the fourth recording parameter corresponding to the plurality of linear velocities PM_{v1} represents the first recording parameter; and $Adj(v)$ represents an adjustment value corresponding to the plurality of linear velocities.

As in claim 24, the prior art of record fails to teach or fairly suggest a recording method having following features:

the plurality of linear velocities are linear 5 velocities continuously ranging from a first linear velocity v_a , which is a

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lowest linear velocity, to a second linear velocity v_b , which is a highest linear velocity; at least one linear velocity of the plurality of linear velocities is the first linear velocity v_a , the second linear velocity v_b , and the linear velocity v_c ; and the first linear velocity v_a , the second linear velocity v_b , and the third linear velocity v_c have a relationship

$$v_c = (v_a + v_b)/2.$$

As in claim 26, the prior art of record fails to teach or fairly suggest a recording method having following features:

the plurality of linear velocities are linear 20 velocities continuously ranging from a first linear velocity v_a , which is a lowest linear velocity, to a second linear velocity v_b , which is a highest linear velocity: the at least one first recording parameter is a recording parameter $PMv1$ corresponding to a linear velocity $v1$ of the plurality of linear velocities and a recording parameter $PMv2$ corresponding a linear velocity $v2$ of the plurality of linear velocities; and the following relationship is satisfied:

$$v_a \leq v1 < v2 \leq v_b, \quad h(v) = \beta \cdot (v - v_a) + PMv1, \text{ and}$$

$$\beta = (PMv2 - PMv1)/(v2 - v1).$$

As in claim 30, the prior art of record fails to teach or fairly suggest a recording method having following features:

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the first recording parameter, the second recording parameter, the third recording parameter, and the fourth recording parameter have a relationship represented by

$$g(v) = f(v) + PMv_l - f(v_l) + Adj(v)$$

where: v represents the plurality of linear velocities~

v_l represents a linear velocity corresponding to one

of the at least one third recording parameter; $g(v)$ represents the second recording parameter corresponding to the plurality of linear velocities; $f(v)$ represents the fourth recording parameter corresponding to the plurality of linear velocities PMv_l represents the first recording parameter; and $Adj(v)$ represents an adjustment value corresponding to the plurality of linear velocities.

As in claim 39, the prior art of record fails to teach or fairly suggest a recording method having following features:

at least one linear velocity of the plurality of linear velocities is at least one linear velocity corresponding to at least one third recording parameter recorded on the recording medium: the second recording parameter determining means determines a second recording parameter $h(v)$ corresponding to the plurality of linear velocities v based on the at least one first recording parameter measured: the plurality of linear velocities are linear velocities continuously ranging from a

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first linear velocity v_a , which is a lowest linear velocity, to a second linear velocity v_b , which is a highest linear velocity; the at least one first recording parameter is a recording parameter PMv_1 corresponding to a linear velocity v_1 of the plurality of linear velocities and a recording parameter PMv_2 corresponding a linear velocity v_2 of the plurality of linear velocities; and the following relationship is satisfied:

$$v_a \leq v_1 < v_2 \leq v_b, \quad h(v) = \beta \cdot (v - v_a) + PMv_1, \text{ and}$$

$$\beta = (PMv_2 - PMv_1) / (v_2 - v_1).$$

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

Related Prior Art

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Suzuki (6,944,106) is pertinent because Suzuki teaches an optical disk system having multiple speed selection.

Ueki (6,404,713) is pertinent because Ueki teaches an optical disk system having multiple speed selection.

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10. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen, can be reached on (571) 272-7579.

The fax number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9191 (toll free).

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September 28, 2010
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